

Claims:

1 A differential circuit comprising a single transistor current mirror, including a capacitor connected to the transistor by a switch, and two current sources connected to the current mirror by respective and independent switches, the switch of one of the current sources being operated together with the capacitor switch so as to charge the capacitor and the switch of the other current source being operated so that the circuit operates as a source-follower amplifier with a current-source load.

2. A differential circuit as claimed in claim 1 wherein the said switches are each implemented as an n-channel transistor.

3. A differential circuit as claimed in claim 1 or claim 2, wherein one or more of the current sources is implemented as an independent transistor.

4. A differential circuit as claimed in claim 1 or claim 2, wherein the current sources are implemented by a single transistor with the gate thereof connected via the two said current source switches to respective voltage inputs.

5. A differential circuit as claimed in claim 4, wherein at least one additional switch is connected to the gate of the said current source single transistor, the

additional switch being operated by a drive signal which is independent of and non-overlapping with drive signals applied to the said current source switches and which operably applies an independent voltage to the gate of the said current source single transistor.

6. A differential circuit as claimed in any preceding claim, wherein the output of the current mirror is connected to a MOS input amplifier.

7. A differential circuit as claimed in any of claims 1 to 5, wherein the output of the current mirror is connected to the input of a second single transistor current mirror.

8. A differential circuit as claimed in any preceding claim, wherein the said two current source switches are connected to the single transistor current mirror via a transistor pair comprising two transistors connected in parallel with each other and having their gates each effectively connected with a respective one of the said two current source switches, so as to receive the respective drive signal applied to the said two current source switches.

9. A differential circuit as claimed in claim 8, wherein the output of the said single transistor current mirror is connected to a self bias comparator via the said

transistor pair.

10. A differential circuit as claimed in any preceding claim, wherein current source connectable so that the circuit operates as a source-follower amplifier with a current-source load is the output of a sensor pixel of an active matrix sensor array.

11. An electronic device having a differential circuit as claimed in any preceding claim.